

REMARKS

I. Introduction

In response to the pending Office Action, Applicants have incorporated the limitations of claims 12 and 13 into independent claims 1 and 4, respectively. Claims 10-13 have been cancelled. No new matter has been added.

For the reasons set forth below, Applicants respectfully submit that all pending claims as currently amended are patentable over the cited prior art.

II. The Rejection Of Claims 1 And 4-13 Under 35 U.S.C. § 103

Claims 1, 6, 8, 10 and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue (USP 5,707,756) in view of Goto et al. (US 2002/0094481); claims 4-5, 9, 11 and 13 as being unpatentable over Inoue in view of Goto and further in view of Shoichiro et al. (JP 2002-319398); and claim 7 as being unpatentable over Inoue in view of Goto and further in view of Fernandez et al. (USP No. 5,637,413). Applicants respectfully traverse these rejections for at least the following reasons.

With regard to the present disclosure, independent claims 1 and 4 recite, in-part, a non-aqueous electrolyte secondary battery comprising a positive electrode material mixture layer which comprises a positive electrode active material comprising a lithium transition metal composite oxide, wherein the lithium transition metal composite oxide is represented by the general formula (1): $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$, the general formula (1) satisfies $1.0 \leq x \leq 1.03$ and $0.051 \leq y \leq 0.15$, the element M in the general formula (1) is at least two selected from the group consisting of Mg, Al, Sr, Mn, Ni and Ca, and a composite oxide B represented by the general

formula (2): $\text{Li}_x\text{Ni}_y\text{Mn}_z\text{M}_{1-y-z}\text{O}_2$, where M is at least one selected from the group consisting of Co, Mg, Al, Ti, Sr and Ca.

One feature of the present disclosure is that the lithium composite oxide being represented by the general formula (1): $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$ satisfies $1.0 \leq x \leq 1.03$ and $0.051 \leq y \leq 0.15$ such that the amount of at least two of Mg, Al, Sr, Mn, Ni or Ca in the general formula is at least 0.051 as compared to the remainder of elements in the compound. As is shown in Table 2 of the specification, battery examples in which the composite oxide A is comprised of a positive electrode active material in which the value of y of 0.051 or less is used (i.e., batteries 16, 17, 20, 21, 24 and 25), the capacity maintenance ratio of the battery is about 70%, whereas batteries in which y is greater than 0.051 (batteries 1-15, 18-19, 22-23 and 26-29), the capacity maintenance ratio is about 80%. This unexpected result is neither discussed nor suggested by the cited prior art.

It is admitted in the Office Action that Inoue fails to disclose a lithium composite oxide having at least two of the elements selected from the above-claimed group. Goto is relied upon to remedy this deficiency. However, as is disclosed in paragraph [0086], Goto teaches a compound $\text{LiCo}_{0.98}\text{Al}_{0.01}\text{Ni}_{0.01}\text{O}_2$. Since $0.01 + 0.01$ (the mole ratio of Al and Ni) is less than 0.051, Goto does not disclose a lithium composite oxide being represented by the general formula (1): $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$ where $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$ satisfies $1.0 \leq x \leq 1.03$ and $0.051 \leq y \leq 0.15$.

Moreover, Shoichiro does not and is not relied upon to remedy this deficiency. As is shown in Table 1 of Shoichiro, none of the examples contain positive electrode active mixtures with two or more selected from Mg, Al, Ti, Sr, Mn, Ni and Ca. As is shown, the samples all only contain one from the group.

Therefore, it is clear that Inoue, alone or in combination with Goto or Shoichiro, fails to teach or suggest all of the limitations of claims 1 and 4 of the present disclosure.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. As Inoue and Nemoto, at a minimum, fail to disclose a non-aqueous electrolyte secondary battery comprising a positive electrode material mixture layer which comprises a positive electrode active material comprising a lithium transition metal composite oxide, wherein said lithium transition metal composite oxide is represented by the general formula (1): $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$, said general formula (1) satisfies $1.0 \leq x \leq 1.03$ and $0.051 \leq y \leq 0.15$, the element M in the general formula (1) is at least two selected from the group consisting of Mg, Al, Sr, Mn, Ni and Ca, it is submitted that Inoue and Goto do not render claims 1 and 4 obvious. Accordingly, claims 1 and 4 are allowable and as such, it is respectfully requested that the § 103 rejection of claims 1 and 4, and any pending claims dependent thereon be withdrawn.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claims 1 and 4 are patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

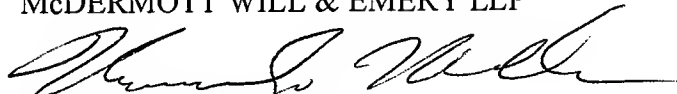
IV. Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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